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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/506,813	01/12/2005	Markus Oles	032301.602	6790
441 7590 10/28/2010 SMITH, GAMBRELL & RUSSELL 1130 CONNECTICUT AVENUE, N.W., SUITE 1130 WASHINGTON, DC 20036				
EXAMINER MATZEK, MATTHEW D				
ART UNIT		PAPER NUMBER		
1786				
MAIL DATE		DELIVERY MODE		
10/28/2010		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/506,813

**Applicant(s)**

OLES ET AL.

**Examiner**

MATTHEW D. MATZEK

**Art Unit**

1786

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 July 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1, 4-23, 25-27, 29 and 31-34 is/are pending in the application.
- 4a) Of the above claim(s) 6-23 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 4, 5, 25-27, 29 and 31-34 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 September 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 7/12/2010 has been entered.

***Response to Amendment***

2. The amendment dated 7/12/2010 has been fully considered and entered into the Record. Claims 1 and 29 have been amended and claims 28 and 30 have been cancelled. Claims 1, 4-23, 25-27, 29, and 31-34 are currently pending. Claims 6-23 remain withdrawn from prosecution and claims 1, 4, 5, 25-27, 29, and 31-34 remain active.

***Response to Arguments***

3. Applicant's arguments, see Remarks, filed 7/12/2010, with respect to the rejection(s) of claim(s) 1, 4, 5, 25-27, 29, and 31-34 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, new grounds of rejection are set forth below. The previous obvious double patenting rejections have been withdrawn due to the applied applications abandonment.

***Claim Objections***

4. Claims 1, 4, 5, 32, and 34 are objected to because of the following informalities: claim 1 recites “surface are” instead of “surface area”. Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 1, 5, 25-27, 29 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zuechner et al. (WO 01/83662 A1) in view of Giatras et al. (US 4,701,345 A). For examination purposes Examiner has relied upon the English language equivalent to the WO document, US 2004/0023824 A1.

a. Zuechner et al. disclose the use of hydrophilic particles ranging in size from 5 to 500 nm for improving the removal of dirt from and/or reducing the re-soiling of surface [0008] by promoting water absorption on the treated surface. Said particles can be used for finishing textiles and for pre-treating or post-treating textiles in particular (abstract). The particles remain in place and are functional after multiple launderings [0009]. The particles may be precipitated silicas and may be applied to cotton fibers for use in textiles [0012]. The particles become anchored in the surface they are to modify [0013]. Zuechner et al. fail to teach the use of fumed hydrophilic silica particles or their surface area.

- b. Giatras et al. disclose the coating of surfaces with chemically inert, hydrophilic, inorganic oxide, such as fumed silica or precipitated silica particles (abstract). The silica particles are to have surface areas from about 100 to 400 m<sup>2</sup>/g (claim 2). The finely-divided particles of fumed silica or precipitated silica have an average particle size in the range of from about 5 to 20 nm (col. 6, lines 1-9).
- c. Zuechner et al. and Giatras et al. are from the same field of endeavor (i.e. hydrophilic silica particles).
- d. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to have recognized that hydrophilic fumed particles and hydrophilic precipitated particles equivalent structures known in the art. Therefore, because these two forms of silica were art-recognized equivalents at the time the invention was made, one of ordinary skill in the art would have found it obvious to substitute hydrophilic fumed silica for hydrophilic precipitated silica in the invention of Zuechner et al. This substitution would provide for the instantly claimed BET surface area (Giatras et al.).
- e. Claim 5 is rejected as the hydrophilic silica particles become anchored in the fibers of the treated textile (Zuechner et al.), which would provide a structure identical to that which is formed according to the claimed process limitations of claim 5. “[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable

even though the prior product was made by a different process.” *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). Once the Examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to Applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product. *In re Marosi*, 218 USPQ 289, 292.

f. The percentage of the surface that is covered with the fumed hydrophilic silica particles is a result effective variable affecting the level of water absorption increase provided to the treated surface. Increasing levels of hydrophilic silica particles yields increasing levels of water absorption on the treated surface. Consequently, absent a clear and convincing showing of unexpected results demonstrating the criticality of the claimed percentages, it would have been obvious to one of ordinary skill in the art to optimize this result-effective variable by routine experimentation. *In re Antonie*, 559 F.2d 618, 195 USPQ 6 (CCPA 1977).

6. Claims 4 and 32-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zuechner et al. (WO 01/83662 A1) in view of Giatras et al. (US 4,701,345 A) as applied to claims 1, 4, and 29 above, and further in view of Soane et al. (US 2003/0013369 A1). Zuechner et al. and Giatras et al. fail to provide for the use of a carrier layer in which to secure the hydrophilic fumed silica particles.

a. Soane et al. disclose nanoparticle-based treatments for textiles (title). The nanoparticles preferably have a size ranging from about 1 nm to 1 micron [0080]. The reactive nanoparticle may be made from a variety of materials including hydrophilic

materials [0080]. Silica particles are used as sunblocking agents, [0112] but may also have hydrophilic properties. The hydrophilicity of the silica particles will increase the water retention capacity by promoting water absorption on the surface of the coated textile. The nanoparticle consists of the payload, in this case silica, and is surrounded by a polymer shell or matrix. The surrounding shell or matrix is in turn reactive with fibers, yarns, fabrics or webs and allows the nanoparticle to become anchored to the surface of textile [0005]. The nanoparticles then become fixative particles. The surrounding shell or matrix serves as the claimed carrier layer in that it facilitates the bonding of the payload to the surface of the textile. Examples I and II demonstrate that while the payload is embedded or entrapped in within the polymeric encapsulator, it is also capable of performing its desired function [0101]. The embedded nanoparticles may result from either solvation or a swelling process [0094]. An embedded nanoparticle allows for some degree of the surface of the silica to be exposed to the surrounding environment, while still being attached to its polymer shell or matrix that in turns connects the nanoparticle and the fiber/fabric it modifies. Functional groups of the nanoparticle shell react with the coated textile or web and the textile is then dried and the polymeric encapsulator may then be cured [0094].

- b. Zuechner et al. and Soane et al. are from the same field of endeavor (i.e. particle treated fabrics).
- c. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to have modified the hydrophilic particles of Zuechner et

al. with the polymeric encapsulator of Soane et al. with the motivation of providing the particles with an additional bonding agent to the surface to be treated,.

d. Soane et al. fail to explicitly disclose that the polymeric shell of the nanoparticle is melted. Claim 32 is rejected as in order to coat the payload nanoparticles with the polymer shell it must be covered with molten polymer. Therefore, the polymer coated nanoparticles applied to the surface of the textile the carrier layer would necessarily comprise melted fixative as the shell at one time was molten. Furthermore, it would have been obvious to one of ordinary skill in the art to have heated the polymer to the point of at least partial melt because the melted polymer would offer additional surface area for bonding over an unmelted shell. The additional surface area would provide an increase in the bond strength over the single point covalent bonding available without any melting of the polymer. Claim 34 is rejected as polymers are curable.



***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MATTHEW D. MATZEK whose telephone number is (571)272-2423. The examiner can normally be reached on M-F, 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Larry Tarazano can be reached on 571.272.1515. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Matthew D Matzek/  
Examiner, Art Unit 1786